



Alabama Achievement Level Descriptors

Grade 5 – Science

The descriptions below provide a brief summary of typical performance for each level. The skills identified in each descriptor represent, but are not all-inclusive of, the skills a student should be able to demonstrate at each achievement level.

	Level 1: Emerging Learner	Level 2: Developing Learner	Level 3: Proficient Learner	Level 4: Distinguished Learner
Matter and Its Interactions	<ul style="list-style-type: none"> Recognizes that objects are made of matter. Recognizes that matter takes up space and has mass. Recognizes that matter cannot be created or destroyed, but that it is conserved. Identifies different properties of matter. Recognizes a physical change. Recognizes a chemical change. Defines density. 	<ul style="list-style-type: none"> Describes that objects are made of particles. Recognizes that conservation of matter applies to chemical and physical changes. Classifies objects by observable properties. Recognizes that mixing substances can change the physical or chemical properties of the substances. Recognizes that different substances have different densities. Recognizes that an object's density remains the same even if the size of the object is changed. 	<ul style="list-style-type: none"> Proves that objects are made of particles too small to be seen. Recognizes when matter is conserved during a chemical reaction. Identifies materials based on their chemical and physical properties. Determines if mixing substances results in new substances. Explains how density affects the buoyancy of an object. 	<ul style="list-style-type: none"> Estimates the number of particles in a sample based on the number of particles in a similar sample. Accounts for and describes all matter before and after a chemical reaction. Chooses appropriate materials for a specific task based on their chemical and physical properties. Predicts if mixing substances will produce new substances. Predicts if an object will sink or float given the density of the object and the liquid(s).



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Motions and Stability: Forces and Interactions	<ul style="list-style-type: none"> ▪ Defines gravity. ▪ Defines friction. ▪ Recognizes that gravity is a force. ▪ Recognizes that friction is a force. ▪ Recognizes that objects are affected by gravity and friction. ▪ Defines force and motion. 	<ul style="list-style-type: none"> ▪ Recognizes that Earth has a strong gravitational force that pulls objects downward. ▪ Recognizes that some surfaces have more friction than others. ▪ Recognizes that forces can change an object's motion. 	<ul style="list-style-type: none"> ▪ Proves that the direction of the gravitational forces exerted by Earth is toward Earth's center. ▪ Demonstrates how forces can be applied to change the speed or direction of an object. 	<ul style="list-style-type: none"> ▪ Compares the strength of gravitational forces between two objects. ▪ Explains and predicts the impacts of forces on the motion of an object.



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Ecosystems: Interactions, Energy, and Dynamics	<ul style="list-style-type: none"> ▪ Defines ecosystem. ▪ Identifies living and non-living parts of an ecosystem. ▪ Recognizes that organisms need matter/materials from their environment to survive. ▪ Recognizes that organisms need energy to survive. ▪ Recognizes that energy comes from the sun. 	<ul style="list-style-type: none"> ▪ Describes the living and non-living characteristics of different ecosystems. ▪ Identifies the matter/materials organisms need to grow and survive. ▪ Recognizes that matter/materials and energy cycle in an ecosystem. ▪ Recognizes that matter/materials and energy can be transferred between organisms. ▪ Recognizes that matter/materials and energy can be transferred between organisms and the environment. ▪ Identifies the roles of producers, consumers, and decomposers in the ecosystem. 	<ul style="list-style-type: none"> ▪ Describes how changes to the living and non-living parts of an ecosystem can affect the amount of matter/materials and energy that is available to organisms. ▪ Explains that plants obtain materials needed for photosynthesis primarily from air and water. ▪ Explains that plants obtain energy needed for photosynthesis from the sun. ▪ Explains the chemical reactions that occur during photosynthesis. ▪ Models how energy is transferred between organisms in a food web. ▪ Models the transfer of energy between organisms and the environment. 	<ul style="list-style-type: none"> ▪ Analyzes how changes to the living and non-living parts of an ecosystem affect the growth and population size of organisms. ▪ Analyzes how changes to an ecosystem affect photosynthesis. ▪ Analyzes how changes to an ecosystem affect the transfer of energy between organisms in a food web and between organism and the environment. ▪ Analyzes how changes to an ecosystem affect the health of the ecosystem. ▪ Analyzes how changes to an ecosystem affects the cycling of matter/materials.



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Earth's Place in the Universe	<ul style="list-style-type: none"> Recognizes that some stars appear bright and some stars appear dim from Earth. Recognizes that the Earth rotates on its axis and revolves around/orbits the sun. Recognizes that the Earth is tilted on its axis. Recognizes that the moon orbits around the Earth. 	<ul style="list-style-type: none"> Recognizes that an object is bright up close and dim farther away and applies this to stars' apparent brightness. Recognizes that day and night are related to the Earth rotating on its axis. Recognizes that it takes one year for the Earth to orbit the sun. Recognizes that seasons occur because of Earth's tilt on its axis. Recognizes that different parts of Earth receive different amounts of sunlight during different times of the day and different seasons. Recognizes that the moon changes in appearance over the course of a month. Identifies the phases of the moon. 	<ul style="list-style-type: none"> Proves that the apparent brightness of the sun compared to other stars is the relative distance from Earth. Describes patterns related to shadows, daytime/nighttime, seasons, moon phases, and stars in the night sky. 	<ul style="list-style-type: none"> Predicts the distance between a star and Earth based on its apparent brightness. Analyzes shadows to predict the time of day. Analyzes the number of hours of daylight to predict the time of year. Analyzes stars in the night sky to predict the season. Predicts which moon phase will come next in the lunar cycle.



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Earth's Systems	<ul style="list-style-type: none"> Describes the spheres of Earth. Recognizes that Earth has both fresh water and salt water. 	<ul style="list-style-type: none"> Describes ways in which Earth's spheres interact. Recognizes examples of freshwater and saltwater reservoirs on Earth. 	<ul style="list-style-type: none"> Explains how Earth's spheres interact to support life. Describes the distribution of and amount of fresh water and salt water on Earth. 	<ul style="list-style-type: none"> Explains how changes to one of Earth's spheres affect the biosphere. Analyzes changes in Earth's water reservoirs over time.
Earth and Human Activity	<ul style="list-style-type: none"> Recognizes examples of Earth's nonrenewable natural resources. Recognizes examples of Earth's renewable natural resources. Identifies types of pollution. Identifies sources of pollution. Identifies the importance of reducing, reusing, and recycling. 	<ul style="list-style-type: none"> Recognizes that Earth's natural resources must be conserved. Recognizes that human activities and resource use affect the environment. Recognizes that pollution impacts both plant and animal life. 	<ul style="list-style-type: none"> Explains ideas that will protect Earth's natural resources and its environment. Determines a process for cleaning a polluted environment. 	<ul style="list-style-type: none"> Analyzes the sustainability of Earth's natural resources over time. Explains and predicts the impacts of change within an ecosystem.